



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER OF PATENTS AND TRADEMARKS
Washington, D.C. 20231
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09 803,920	03 13 2001	Makoto Kondo	108920	8921

25944 7590 08/06/2002

OLIFF & BERRIDGE, PLC
P.O. BOX 19928
ALEXANDRIA, VA 22320

EXAMINER

NGUYEN, HUNG

ART UNIT	PAPER NUMBER
----------	--------------

2851

DATE MAILED: 08/06/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/803,920

Applicant(s)

KONDO, MAKOTO

Examiner

Hung Henry V Nguyen

Art Unit

2851

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 20 June 2002.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-27 is/are pending in the application.
- 4a) Of the above claim(s) 6-14 and 22-27 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-3 and 15-21 is/are rejected.
- 7) ☒ Claim(s) 4 and 5 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 13 March 2001 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 6.
- 4) ☐ Interview Summary (PTO-413) Paper No(s) _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other:

Art Unit: 2851

DETAILED ACTION

Election/Restrictions

1. Applicant's election with traverse of claims 1-5 and 15-21 in Paper No. 12 is acknowledged. The traversal is on the ground(s) that "the search and examination of the entire application could be made without serious burden". This is not found persuasive because while the invention I (species 1) is explicitly related to a substrate holding device with specific structures for suppressing the deformation of the wafer, the invention II is drawn to a substrate holding device with specific material for preventing a crack of the anti-electronic charging material and other invention is drawn to a substrate holding device having different structures for reducing time of exchanging the substrate. As such, the distinct and separate search and examination are quite extensive and place serious burden on the Examiner.

The requirement is still deemed proper and is therefore made FINAL.

Drawings

2. Figure 8 should be designated by a legend such as --Prior Art-- because only that which is old is illustrated. See MPEP § 608.02(g). A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

Art Unit: 2851

Claim Objections

3. Claims 1-5, 15-21 are objected to because claim 1 recites the limitation "the same plane" in line 7. There is insufficient antecedent basis for this limitation in the claim.

Claim Rejections - 35 USC § 102

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

5. Claims 1-3, 15-17, are rejected under 35 U.S.C. 102(b) as being anticipated by Taniguchi et al (U.S.Pat. 4,666,291).

With regard to claims 1-3, Taniguchi (fig.1) discloses an exposure apparatus comprising all structures as set forth in the instant claims such as: a substrate holding device (see fig.4) having a base member (12); a plurality of projecting support elements (15) which are arranged like triangular meshes and the distal top end portions are placed on substantially a same plane (see fig.5) for supporting the substrate (6).

With regard to claim 2, Taniguchi teaches a suction mechanism (20) for allowing the chuck platen (12) to suck the substrate by vacuum.

As to claim 3, Taniguchi discloses a rim (12b) formed on the base member so as to surround the plurality support elements (15) and a gas suction port (19).

With regard to claims 15-17, Taniguchi further discloses a light source (9); a mask (7) having a predetermined pattern formed thereon; a stage system (2) for moving the mask and

Art Unit: 2851

wafer relatively to the exposure beam for scanning and exposing the wafer with the beam from the mask by irradiation of the exposure beam.

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. Claims 18-21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Taniguchi et al (U.S. Pat. 4,666,291).

With regard to claims 18-21, Taniguchi discloses an exposure apparatus having a substrate holding device comprising substantially all basic features of the invention as claimed. Taniguchi does not expressly disclose the plurality of projecting support members arranged like a isosceles triangular/or parallelograms/ or rhombuses. As discussed, Taniguchi does disclose that the chuck platen is formed with a number of projecting support members (15) patterned in the form of a grid of triangular meshes which can be regarded as "isosceles triangular or parallelogram or rhombuses" in the broadest sense (as clearly illustrated from fig.4). It would have been obvious to one having ordinary skill in the art at the time the invention was made to incorporate the teachings of Taniguchi to obtain the invention as specified in claims 18-21. It would have been obvious to a skilled artisan, in view of Taniguchi's teachings to arrange the projecting support members in triangular shape or parallelograms shape or rhomb shape for

Art Unit: 2851

providing the even suction forces on the entire surface of the wafer and thus reducing the deformation of the wafer and improving the quality of the images to be printed on the wafer.

8. Claims 1-3, 15-21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Mori et al (U.S.Pat. 5,191,218) in view of Taniguchi et al (U.S.Pat. 4,666,291).

As to claims 1-3, and 15-21, Mori et al discloses a vacuum attraction holding device for holding a substrate and is used in an exposure apparatus for transferring a pattern formed on a reticle onto a substrate and comprising: a base member (1), a plurality of projecting support members (3) where the distal end portions positioned on a same plane for supporting the substrate (see fig.1) and suction mechanism (6,7) for attracting the substrate toward the base member. Mori et al does not expressly teach the plurality of projecting support members (3) being arranged like triangular lattice as well as being arranged in a isosceles triangular/or parallelograms/ or rhombuses. As discussed above, Taniguchi discloses a substrate holding device where the chuck platen is formed with a number of projecting support members (15) patterned in the form of a grid of triangular meshes which can be regarded as "isosceles triangular or parallelogram or rhombuses" in the broadest sense (as clearly illustrated from fig.4). It would have been obvious to one having ordinary skill in the art at the time the invention was made to incorporate the teachings of Mori and Taniguchi to obtain the invention as specified in claims 1-3, 15-21. It would have been obvious to a skilled artisan to arrange the projecting support members as taught by Mori in triangular shape as suggested by Taniguchi or parallelograms shape or rhomb shape for providing the even suction forces on the entire surface

Art Unit: 2851

of the wafer and thus reducing the deformation of the wafer and improving the quality of the images to be printed on the wafer.

Allowable Subject Matter

9. Claims 4-5 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

10. The following is a statement of reasons for the indication of allowable subject matter: the prior art of record neither alone or in combination, neither discloses nor makes obvious an substrate holding device where a plurality of support members being arranged like a lattice of equilateral triangles satisfying specific condition as cited in claims 4-5.

Prior Art Made of Record

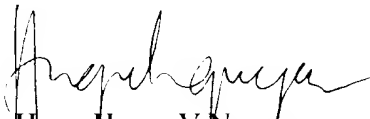
11. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Takahashi (U.S.Pat. 4,503,335), Sakai et al (U.S.Pat. 4,73,824) and Amemiya et al (U.S.Pat. 5,329,126) discloses exposure apparatus having substrate holding device, each of which comprises substantially all elements as recited in the instant application.

Art Unit: 2851

12. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Hung Henry V Nguyen whose telephone number is 703-305-6462. The examiner can normally be reached on Monday-Friday (First Friday off).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Russ Adams can be reached on 703-308-2847. Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-305-4900.


Hung Henry V Nguyen
Examiner
Art Unit 2851

hvn
July 30, 2002